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| 10/090,250 | 03/01/2002 | Suresh M. Menon | X-1050 US | 4098 |
| 24309 | 7590 | 09/20/2005 | EXAMINER | |
| XILINX, INC ATTN: LEGAL DEPARTMENT 2100 LOGIC DR SAN JOSE, CA 95124 | | | WANG, TED M | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2634 | |

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/090,250

Applicant(s)

MENON ET AL.

Examiner

Ted M. Wang

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9, 11-16 and 18 is/are rejected.
- 7) ☒ Claim(s) 8, 10, 17 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 9, 11, 12, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Kean (US 5,701,091).

- With regard claim 1, Kean discloses an integrated circuit comprising:
 - a plurality of configuration memory cells (Fig.3 element Switch 15 and column 2 lines 5-19);
 - at least one transceiver (Fig.1 elements 78 and 79 and column 1 line 60 – column 2 line 4) containing components having selectable values (Fig.3 elements EN, PUP, RPUP, TPUP, SLEW, OUT), said components being configured by said plurality of configuration memory cells (column 1 line 60 – column 2 line 19).
- With regard claim 9, Kean further discloses a programmable fabric (Fig.1 and column 1 lines 14-40); and
 - at least one signal generated by said programmable fabric for controlling said values of said components (Fig.3 elements 15-18).
- With regard claim 11, Kean discloses an integrated circuit comprising:
 - a programmable fabric (Fig.1 and column 1 lines 14-40);

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a processor core surrounded by said programmable fabric (column 1 lines 28-40 and column 3 lines 23-38);

a plurality of configurable transceivers located at the peripheral of said programmable fabric (Fig.1 elements 78 and 79 and column 1 line 60 – column 2 line 4); and

a plurality of signal paths connecting at least one of said configurable transceivers and said processor core, at least a portion of each of said signal paths passing through said programmable fabric (Fig.3 elements 15-18, Switching output EN, OUT, PAD IN and column 1 line 52 – column 2 line 19).

- With regard claim 12, all limitation is contained in claims 11 and 1. The explanation of all the limitation is already addressed in the above paragraph.
- With regard claim 18, all limitation is contained in claims 11 and 9. The explanation of all the limitation is already addressed in the above paragraph.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-5, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kean (US 5,701,091) in view of Plants (US 6,237,124).

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- With regard claim 2, Kean discloses all of the subject matter as described in the above paragraph except for specifically teaching one of said components is a cyclic redundancy code generator.

However, Plants teaches a cyclic redundancy code circuit generator (Fig.4 element 40 and column 7 line 1 – column 8 line 37) in an integrated circuitry or FPGA.

It is desirable to have a cyclic redundancy code circuit generator in an integrated circuitry or FPGA to indicate an error has occurred during signal processing operation and take necessary action to correct the error so as to improve the FPGA operation performance. Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include circuit as taught by Plants in which having a cyclic redundancy code circuit generator in an integrated circuitry, into Kean's integrated circuit so as to improve the FPGA operation performance.

- With regard claim 3, Kean discloses all of the subject matter as described in the above paragraph except for specifically teaching one of said components is a cyclic redundancy code verification block.

However, Plants teaches a cyclic redundancy code circuit verification block (Fig.4 element 40 and column 7 line 1 – column 8 line 37) in an integrated circuitry or FPGA.

It is desirable to have a cyclic redundancy code circuit verification block in an integrated circuitry or FPGA to verify and indicate an error has occurred if the known correct values do not match with the signature during signal processing operation and take necessary action to correct the error so as to improve the FPGA

operation performance. Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include circuit as taught by Plants in which having a cyclic redundancy code circuit verification block in an integrated circuitry, into Kean's integrated circuit so as to improve the FPGA operation performance.

- With regard claims 4 and 5, Kean discloses all of the subject matter as described in the above paragraph except for specifically teaching one of said components is a serializer/ deserializer.

However, Plants teaches a serializer/ deserializer (Fig.4 element 32 and column 5 lines 10-25) in an integrated circuitry or FPGA. Note that, Upon either power up or at device reset, an EPROM controller 32 serializes the data stream from the EPROM 30 into a serial data stream (SDATA) one bit wide. Inherently, the EPROM controller 32 will deserializes the data stream to the EPROM 30.

It is desirable to have a serializer/ deserializer in an integrated circuitry or FPGA to reduce the number of pins in a integrated circuit in order to improve the manufacturing ability such as soldering when the IC is mounted in a print circuit board. Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include circuit as taught by Plants in which having a serializer/ deserializer in an integrated circuitry, into Kean's integrated circuit so as to improve the manufacturing ability such as soldering when the IC is mounted in a print circuit board.

- With regard claim 13, all limitation is contained in claims 10, 3, and 2. The explanation of all the limitation is already addressed in the above paragraph.

- With regard claim 14, all limitation is contained in claims 10, 5, and 4. The explanation of all the limitation is already addressed in the above paragraph.

5. Claims 6 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kean (US 5,701,091) and Plants (US 6,237,124) as applied to claims 5 and 10 above, and further in view of Schneider (US 6,594,275).

- With regard claim 6, Kean and Plants disclose all of the subject matter as described in the above paragraph except for specifically teaching the deserializer further comprises configurable comma detection function.

However, Schneider teaches a deserializer with comma detection function (Fig. 1 element 12, column 6 lines 12-17, column 7 lines 8-38, and column 8 lines 15-21). It is desirable to have a deserializer with comma detection function. The reason for this is that the serial in, parallel out shift register in an integrated circuit is typically large enough-to capture an entire byte-multiple word of data, to facilitate the detection of a delimiter character (i.e., a character such as a comma which facilitates the proper framing of the data as byte-multiple parallel data words), so that the data conversion processing performance is improved. Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the function as taught by Schneider in which having a deserializer with comma detection function, into Kean and Plants' integrated circuitry so as to improve the data conversion processing performance.

- With regard claim 15, all limitation is contained in claims 10 and 6. The explanation of all the limitation is already addressed in the above paragraph.

6. Claims 7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kean (US 5,701,091) in view of Hausman et al. (US 5,872,920).

- With regard claim 7, Kean discloses all of the subject matter as described in the above paragraph except for specifically teaching one of said components is an elastic buffer.

However, Hausman et al. teaches an elastic buffer in an integrated circuitry (Fig.1 element 210, 160, 170, 080, and 190, and column 2 lines 24-60).

It is desirable to have an elastic buffer in an integrated circuitry to control and adjust the input and output packages so that the data overflow issue is improved.

Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the circuit as taught by Hausman et al. in which having an elastic buffer in an integrated circuitry, into Kean so that the data overflow issue is improved.

- With regard claim 16, all limitation is contained in claims 10 and 6. The explanation of all the limitation is already addressed in the above paragraph.

Allowable Subject Matter

7. Claims 8, 10, 17, and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. Reference(s) US 6,798,239, US 6,115,763 and US 5,594,367 are cited because they are put pertinent to the FPGA with cell memory. However, none of references teach detailed connection as recited in claim.


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted M. Wang whose telephone number is 571-272-3053. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ted M Wang
Examiner
Art Unit 2634

Ted M. Wang


STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
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